

VI. SUMMARY OF FEDERAL STATUTES AND REGULATIONS

This section discusses the Federal regulations that may apply to this sector. The purpose of this section is to highlight and briefly describe, the applicable Federal requirements, as well as to provide citations for more detailed information. This sections includes:

- Section VI.A, a general overview of major statutes
- Section VI.B, a list of regulations specific to this industry
- Section VI.C, a list of pending and proposed regulations.

The descriptions within Section VI are intended solely for general information. Depending upon the nature or scope of the activities at a particular facility, these summaries may or may not necessarily describe all applicable environmental requirements. Moreover, they do not constitute formal interpretations or clarifications of the statutes and regulations. For further information, readers should consult the Code of Federal Regulations and other state or local regulatory agencies. This section also provides EPA hotline contacts for each major statute.

VI.A General Description of Major Statutes

Resource Conservation and Recovery Act

The Resource Conservation And Recovery Act of 1976, which amended the Solid Waste Disposal Act, addresses solid (Subtitle D) and hazardous (Subtitle C) waste management activities. The Hazardous and Solid Waste Amendments (HSWA) of 1984 strengthened RCRA's waste management provisions and added Subtitle I, which governs underground storage tanks (USTs).

Regulations promulgated pursuant to Subtitle C of RCRA (40 CFR Parts 260-299) establish a "cradle-to-grave" system governing hazardous waste from the point of generation to disposal. RCRA hazardous wastes include the specific materials listed in the regulations (listed wastes). Listed wastes are designated with a specific code. Hazardous wastes designated with the code "P" or "U" are commercial chemical products including technical grades, pure forms, off-specification products, sole-active-ingredient products, or spill or container residues of these products. "P" wastes are considered acutely hazardous and are subject to more stringent requirements. Hazardous wastes from specific industries/sources are designated with the code "K" and hazardous wastes from non-specific sources are designated with the code "F." Materials that exhibit a hazardous waste characteristic (i.e., ignitability, corrosivity, reactivity, or toxicity) are designated with the code "D."

Regulated entities that generate hazardous waste are subject to waste accumulation, manifesting, and record keeping standards. Facilities generally must obtain a permit either from EPA or from a State agency that EPA has authorized to implement the permitting program if they store hazardous wastes for more than 90 days before treatment or disposal. Facilities may treat hazardous wastes stored in less-than-ninety-day tanks or containers without a permit. Subtitle C permits contain general facility standards, such as contingency plans, emergency procedures, record keeping and reporting requirements, financial assurance mechanisms, and unit-specific standards. RCRA also contains provisions (40 CFR Part 264 Subpart S and §264.101) for conducting corrective actions that govern the cleanup of releases of hazardous waste or constituents from solid waste management units at RCRA treatment, storage, and disposal facilities.

Although RCRA is a Federal statute, many States implement the RCRA program. Currently, EPA has delegated authority to implement various provisions of RCRA to 47 of the 50 States and two U.S. territories. Delegation has not been given to Alaska, Hawaii, or Iowa.

Most RCRA requirements are not industry specific but apply to any company that generates, transports, treats, stores, or disposes of hazardous waste. The following list highlights important RCRA regulatory requirements:

- **Identification of solid and hazardous wastes** (40 CFR Part 261) lays out the procedure every generator must follow to determine whether the material in question is considered a hazardous waste or a solid waste or is exempted from regulation.
- **Standards for generators of hazardous waste** (40 CFR Part 262) establishes the responsibilities of hazardous waste generators including obtaining an EPA ID number, preparing a manifest, ensuring proper packaging and labeling, meeting standards for waste accumulation units, and fulfilling record keeping and reporting requirements. Providing they meet additional requirements described in 40 CFR Part 262.34, generators may accumulate hazardous waste for up to 90 days (or 180 or 270 days depending on the amount of waste generated and the distance the waste will be transported) without obtaining a Subtitle C permit.
- **Land disposal restrictions (LDRs)** (40 CFR Part 268) are regulations prohibiting the disposal of hazardous waste on land without prior treatment. Under the LDRs program, materials must meet LDR treatment standards prior to placement in a RCRA land disposal unit (landfill, land treatment unit, waste pile, or surface impoundment). Generators of waste subject to the LDRs must provide notification of such to the designated

treatment, storage, and disposal (TSD) facility to ensure proper treatment prior to disposal.

- **Used oil management standards** (40 CFR Part 279) impose management requirements affecting the storage, transportation, burning, processing, and re-refining of the used oil. For parties that merely generate used oil, regulations establish storage standards. For a party considered a used oil processor, re-refiner, burner, or marketer (i.e., one who generates and sells off-specification used oil directly to a used oil burner), additional tracking and paperwork requirements must be satisfied.
- RCRA contains unit-specific standards for all units used to store, treat, or dispose of hazardous waste, including tanks and containers. Tanks and containers used to store hazardous waste with a high volatile organic concentration must meet emission standards under RCRA. Regulations (40 CFR Part 264-265, Subpart CC) require generators to test the waste to determine the concentration of the waste, to satisfy tank and container emissions standards, and to inspect and monitor regulated units. These regulations apply to all facilities that store such waste, including large quantity generators accumulating waste prior to shipment off-site.
- **Underground storage tanks** containing petroleum and hazardous substances are regulated under Subtitle I of RCRA. Subtitle I regulations (40 CFR Part 280) contain tank design and release detection requirements, as well as financial responsibility and corrective action standards for USTs. The UST program also includes upgrade requirements for existing tanks that must be met by December 22, 1998.
- **Boilers and industrial furnaces** (BIFs) that use or burn fuel containing hazardous waste must comply with design and operating standards. The BIF regulations (40 CFR Part 266, Subpart H) address unit design, provide performance standards, require emissions monitoring, and restrict the type of waste that may be burned.

The EPA RCRA, Superfund and EPCRA Hotline, at (800) 424-9346, responds to questions and distributes guidance regarding all RCRA regulations. The RCRA Hotline operates weekdays from 9:00 a.m. to 6:00 p.m. ET, excluding Federal holidays.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), a 1980 law known commonly as Superfund, authorizes EPA to respond to releases, or threatened releases, of hazardous substances that

may endanger public health, welfare, or the environment. In addition, CERCLA enables EPA to force parties responsible for environmental contamination to clean it up or to reimburse the Superfund for response costs (including remediation costs) incurred by EPA. The Superfund Amendments and Reauthorization Act (SARA) of 1986 revised various sections of CERCLA, extended the taxing authority for the Superfund, and created a free-standing law, SARA Title III, also known as the Emergency Planning and Community Right-to-Know Act.

The CERCLA hazardous substance release reporting regulations (40 CFR Part 302) direct the person in charge of a facility to report to the National Response Center (NRC) any environmental release of a hazardous substance that equals or exceeds a reportable quantity. Reportable quantities are listed in 40 CFR §302.4. A release report may trigger a response by EPA or by one or more Federal or State emergency response authorities.

The EPA implements hazardous substance responses according to procedures outlined in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR Part 300). The NCP includes provisions for permanent cleanups, known as remedial actions, and other cleanups referred to as removals. The EPA generally takes remedial actions only at sites on the National Priorities List (NPL), which currently includes approximately 1,300 sites. Both EPA and states can act at sites; however, EPA provides responsible parties the opportunity to conduct removal and remedial actions and encourages community involvement throughout the Superfund response process.

The EPA RCRA, Superfund and EPCRA Hotline, at (800) 424-9346, answers questions and references guidance pertaining to the Superfund Program. The CERCLA Hotline operates weekdays from 9:00 a.m. to 6:00 p.m. ET, excluding Federal holidays.

Emergency Planning And Community Right-To-Know Act

The Superfund Amendments and Reauthorization Act of 1986 created EPCRA, a statute designed to improve community access to information about chemical hazards and to facilitate the development of chemical emergency response plans by State and local governments. The EPCRA required the establishment of State emergency response commissions (SERCs), which are responsible for coordinating certain emergency response activities and for appointing local emergency planning committees (LEPCs).

The EPCRA and the EPCRA regulations (40 CFR Parts 350-372) establish four types of reporting obligations for facilities that store or manage specified chemicals:

- **EPCRA §302** requires facilities to notify the SERC and LEPC of the presence of any extremely hazardous substance (the list of such substances is in 40 CFR Part 355, Appendices A and B) if it has such substance in excess of the substance's threshold planning quantity and directs the facility to appoint an emergency response coordinator.
- **EPCRA §304** requires the facility to notify the SERC and LEPC in the event of a release equaling or exceeding the reportable quantity of a CERCLA hazardous substance or an EPCRA extremely hazardous substance.
- **EPCRA §311 and §312** require a facility at which a hazardous chemical, as defined by the Occupational Safety and Health Act, is present in an amount exceeding a specified threshold to submit to the SERC, LEPC, and local fire department material safety data sheets (MSDSs) or lists of MSDS's and hazardous chemical inventory forms (also known as Tier I and II forms). This information helps the local government respond in the event of a spill or release of the chemical.
- **EPCRA §313** applies to facilities covered in SIC major groups 10 (except 1011, 1081, and 1094), 12 (except 1241), or 20 through 39; SIC codes 4911, 1193, and 4939 (limited to facilities that combust coal and/or oil for the purposes of generating power for distribution in commerce); or 4935 (limited to facilities regulated under RCRA, Subtitle C), or 5169, or 5171, and 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis). These facilities must also have 10 or more employees and manufacture, process, or use specified chemicals in amounts greater than threshold quantities. Facilities that meet these criteria must submit an annual toxic chemical release report. This report, commonly known as the Form R, covers releases and transfers of toxic chemicals to various facilities and environmental media and allows EPA to compile the national TRI database.

All information submitted pursuant to EPCRA regulations is publicly accessible, unless protected by a trade secret claim.

The EPA RCRA, Superfund and EPCRA Hotline, at (800) 424-9346, answers questions and distributes guidance regarding the EPCRA regulations. The EPCRA Hotline operates weekdays from 9:00 a.m. to 6:00 p.m. ET, excluding Federal holidays.

Clean Water Act

The primary objective of the Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA), is to restore and maintain the

chemical, physical, and biological integrity of the Nation's surface waters. Pollutants regulated under the CWA include "priority" pollutants, including various toxic pollutants; "conventional" pollutants, such as biochemical oxygen demand (BOD), total suspended solids (TSS), fecal coliform, oil and grease, and pH; and "nonconventional" pollutants, including any pollutant not identified as either conventional or priority.

The CWA regulates both direct and indirect discharges. The NPDES Program (CWA §502) controls direct discharges into waters of the U.S. Direct discharges or "point source" discharges are from sources such as pipes and sewers. NPDES permits, issued by either EPA or an authorized State (EPA has authorized 42 States to administer the NPDES Program), contain industry-specific, technology-based limits and may also include additional water quality-based limits, and establish pollutant monitoring requirements. A facility that intends to discharge into the Nation's waters must obtain a permit prior to initiating its discharge. A permit applicant must provide quantitative analytical data identifying the types of pollutants present in the facility's effluent. The permit will then set the conditions and effluent limitations on the facility discharges.

A NPDES permit may also include discharge limits based on Federal or State water quality criteria or standards that were designed to protect designated uses of surface waters, such as supporting aquatic life or recreation. These standards, unlike the technological standards, generally do not take into account technological feasibility or costs. Water quality criteria and standards vary from State to State and site to site, depending on the use classification of the receiving body of water. Most States follow EPA guidelines, which propose aquatic life and human health criteria for many of the 126 priority pollutants.

Storm Water Discharges

In 1987, the CWA was amended to require EPA to establish a program to address storm water discharges. In response, EPA promulgated the NPDES storm water permit application regulations. These regulations require facilities with the following storm water discharges to apply for a NPDES permit: (1) a discharge associated with industrial activity, (2) a discharge from a large or medium municipal storm sewer system, or (3) a discharge that EPA or the State determines to contribute to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.

The term "storm water discharge associated with industrial activity" is a storm water discharge from 1 of 11 categories of industrial activity defined at 40 CFR 122.26. Six of the categories are defined by SIC codes, while the

other five are identified through narrative descriptions of the regulated industrial activity. If the primary SIC code of the facility is one of those identified in the regulations, the facility is subject to the storm water permit application requirements. If any activity at a facility is covered by one of the five narrative categories, storm water discharges from those areas where the activities occur are subject to storm water discharge permit application requirements.

Those facilities/activities that are subject to storm water discharge permit application requirements are identified in the following list:

- **Category I:** Facilities subject to storm water effluent guidelines, new source performance standards, or toxic pollutant effluent standards.
- **Category ii:** Facilities classified as SIC 24-lumber and wood products (except wood kitchen cabinets); SIC code 26-paper and allied products (except paperboard containers and products); SIC code 28-chemicals and allied products (except drugs and paints); SIC code 291-petroleum refining; and SIC code 311-leather tanning and finishing; SIC code 32 (except 323)-stone, clay, glass, and concrete, 33-primary metals, 3441-fabricated structural metal, and 373-ship and boat building and repairing.
- **Category iii:** Facilities classified as SIC code 10-metal mining; SIC code 12-coal mining; SIC code 13-oil and gas extraction; and SIC code 14-nonmetallic mineral mining.
- **Category iv:** Hazardous waste treatment, storage, or disposal facilities.
- **Category v:** Landfills, land application sites, and open dumps that receive or have received industrial wastes.
- **Category vi:** Facilities classified as SIC code 5015-used motor vehicle parts; and SIC code 5093-automotive scrap and waste material recycling facilities.
- **Category vii:** Steam electric power generating facilities.
- **Category viii:** Facilities classified as SIC code 40-railroad transportation; SIC code 41-local passenger transportation; SIC code 42-trucking and warehousing (except public warehousing and storage); SIC code 43-U.S. Postal Service; SIC code 44-water transportation; SIC code 45-transportation by air; and SIC code 5171-petroleum bulk storage stations and terminals.
- **Category ix:** Sewage treatment works.

- **Category x:** Construction activities except operations that result in the disturbance of less than five acres of total land area.
- **Category xi:** Facilities classified as SIC code 20-food and kindred products; SIC code 21-tobacco products; SIC code 22-textile mill products; SIC code 23-apparel related products; SIC code 2434-wood kitchen cabinets manufacturing; SIC code 25-furniture and fixtures; SIC code 265-paperboard containers and boxes; SIC code 267-converted paper and paperboard products; SIC code 27-printing, publishing, and allied industries; SIC code 283-drugs; SIC code 285-paints, varnishes, lacquer, enamels, and allied products; SIC code 30-rubber and plastics; SIC code 31-leather and leather products (except leather and tanning and finishing); SIC code 323-glass products; SIC code 34-fabricated metal products (except fabricated structural metal); SIC code 35-industrial and commercial machinery and computer equipment; SIC code 36-electronic and other electrical equipment and components; SIC code 37-transportation equipment (except ship and boat building and repairing); SIC code 38-measuring, analyzing, and controlling instruments; SIC code 39-miscellaneous manufacturing industries; and SIC code 4221-4225-public warehousing and storage.

To determine whether a particular facility falls within one of these categories, consult the regulation.

Pretreatment Program

Another type of discharge that is regulated by the CWA is one that goes to a publicly-owned treatment works (POTWs). The national pretreatment program (CWA §307(b)) controls the indirect discharge of pollutants to POTWs by "industrial users." Facilities regulated under §307(b) must meet certain pretreatment standards. The goal of the pretreatment program is to protect municipal wastewater treatment plants from damage that may occur when hazardous, toxic, or other wastes are discharged into a sewer system and to protect the quality of sludge generated by these plants. Discharges to a POTW are regulated primarily by the POTW itself, rather than the State or EPA.

The EPA has developed technology-based standards for industrial users of POTWs. Different standards apply to existing and new sources within each category. "Categorical" pretreatment standards applicable to an industry on a nationwide basis are developed by EPA. In addition, another kind of pretreatment standard, "local limits," are developed by the POTW in order to assist the POTW in achieving the effluent limitations in its NPDES permit.

Regardless of whether a State is authorized to implement either the NPDES or the pretreatment program, if it develops its own program, it may enforce requirements more stringent than Federal standards.

Spill Prevention, Control and Countermeasure Plans

The 1990 Oil Pollution Act requires that facilities that could reasonably be expected to discharge oil in harmful quantities prepare and implement more rigorous Spill Prevention Control and Countermeasure (SPCC) Plan required under the CWA (40 CFR §112.7). There are also criminal and civil penalties for deliberate or negligent spills of oil. Regulations covering response to oil discharges and contingency plans (40 CFR Part 300), and Facility Response Plans to oil discharges (40 CFR §112.20) and for PCB transformers and PCB-containing items were revised and finalized in 1995.

EPA's Office of Water, at (202) 260-5700, will direct callers that questions about the CWA to the appropriate EPA office. EPA also maintains a bibliographic database of Office of Water publications which can be accessed through the Ground Water and Drinking Water Resource Center, at (202) 260-7786.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) mandates that EPA establish regulations to protect human health from contaminants in drinking water. The law authorizes EPA to develop national drinking water standards and to create a joint Federal-State system to ensure compliance with these standards. The SDWA also directs EPA to protect underground sources of drinking water by controlling underground injection of liquid wastes.

The EPA has developed primary and secondary drinking water standards under its SDWA authority. The EPA and authorized States enforce the primary drinking water standards, which are contaminant-specific concentration limits that apply to certain public drinking water supplies. Primary drinking water standards consist of maximum contaminant level goals (MCLGs), which are non-enforceable, health-based goals, and maximum contaminant levels (MCLs), which are enforceable limits set as close to MCLGs as possible, considering cost and feasibility of attainment.

The SDWA Underground Injection Control (UIC) Program (40 CFR Parts 144-148) is a permit program that protects underground sources of drinking water by regulating five classes of injection wells. The UIC permits include design, operating, inspection, and monitoring requirements. Wells used to inject hazardous wastes must also comply with RCRA corrective action standards in order to be granted a RCRA permit and must meet applicable

RCRA land disposal restrictions standards. The UIC permit program is primarily State-enforced, since EPA has authorized all but a few States to administer the program.

The SDWA also provides for a Federally-implemented sole source aquifer program, which prohibits Federal funds from being expended on projects that may contaminate the sole or principal source of drinking water for a given area, and for a State-implemented wellhead protection program which is designed to protect drinking water wells and drinking water recharge areas.

The EPA Safe Drinking Water Hotline, at (800) 426-4791, answers questions and distributes guidance pertaining to SDWA standards. The Hotline operates from 9:00 a.m. through 5:30 p.m. ET, excluding Federal holidays.

Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) granted EPA authority to create a regulatory framework to collect data on chemicals in order to evaluate, assess, mitigate, and control risks that may be posed by their manufacture, processing, and use. TSCA provides a variety of control methods to prevent chemicals from posing unreasonable risk.

The TSCA standards may apply at any point during a chemical's life cycle. Under TSCA §5, EPA has established an inventory of chemical substances. If a chemical is not already on the inventory and has not been excluded by TSCA, a premanufacture notice (PMN) must be submitted to EPA prior to manufacture or import. The PMN must identify the chemical and provide available information on health and environmental effects. If available data are not sufficient to evaluate the chemical's effects, EPA can impose restrictions pending the development of information on its health and environmental effects. The EPA can also restrict significant new uses of chemicals based upon factors such as the projected volume and use of the chemical.

Under TSCA §6, EPA can ban the manufacture or distribution in commerce of, limit the use of, require labeling for, or place other restrictions on chemicals that pose unreasonable risks. Among the chemicals EPA regulates under §6 authority are asbestos, CFCs, and PCBs.

The EPA TSCA Assistance Information Service, at (202) 554-1404, answers questions and distributes guidance pertaining to TSCA standards. The Service operates from 8:30 a.m. through 4:30 p.m. ET, excluding Federal holidays.

Clean Air Act

The Clean Air Act and its amendments, including the Clean Air Act Amendments (CAAA) of 1990, are designed to “protect and enhance the nation's air resources so as to promote the public health and welfare and the productive capacity of the population.” The CAA consists of six sections, known as titles, that direct EPA to establish national standards for ambient air quality and for EPA and the States to implement, maintain, and enforce these standards through a variety of mechanisms. Under the CAAA, many facilities will be required to obtain permits for the first time. State and local governments oversee, manage, and enforce many of the requirements of the CAAA. The CAA regulations appear at 40 CFR Parts 50-99.

Pursuant to Title I of the CAA, EPA has established NAAQS to limit levels of criteria pollutants, including carbon monoxide (CO), lead (Pb), NO₂, PM, ozone, SO₂, and volatile organic compounds (VOCs). Geographic areas that meet NAAQS for a given pollutant are classified as attainment areas; those that do not meet NAAQS are classified as non-attainment areas. Under section 110 of the CAA, each State must develop a State Implementation Plan (SIP) to identify sources of air pollution and to determine what reductions are required to meet Federal air quality standards. Revised NAAQS for particulates and ozone were proposed in 1996 and may go into effect as early as late 1997.

Title I also authorizes EPA to establish new source performance standards (NSPS), which are nationally uniform emission standards for new stationary sources falling within particular industrial categories. NSPS are based on the pollution control technology available to that category of industrial source.

Under Title I, EPA establishes and enforces national emission standards for hazardous air pollutants (NESHAPs), which are nationally uniform standards oriented towards controlling particular HAPs. Title I, section 112(c) of the CAA further directed EPA to develop a list of sources that emit any of 188 HAPs and to develop regulations for these categories of sources. To date, EPA has listed 174 categories and developed a schedule for the establishment of emission standards. The emission standards will be developed for both new and existing sources based on maximum achievable control technology (MACT). The MACT is defined as the control technology achieving the maximum degree of reduction in the emission of the HAPs.

Title II of the CAA pertains to mobile sources, such as cars, trucks, buses, and planes. Reformulated gasoline, automobile pollution control devices, and vapor recovery nozzles on gas pumps are a few of the mechanisms EPA uses to regulate mobile air emission sources.

Title IV of the CAA establishes a SO₂ and NO₂ emissions control program designed to reduce the formation of acid rain. Reduction of sulfur dioxide releases will be obtained by granting to certain sources limited emissions allowances, which, beginning in 1995, will be set below previous levels of SO₂ sulfur dioxide releases. Reduction of nitrogen will be obtained by required reduction of nitrogen oxides from power plants and new cars.

Title V of the CAA of 1990 created a permit program for all "major sources" (and certain other sources) regulated under the CAA. One purpose of the operating permit is to include in a single document all air emissions requirements that apply to a given facility. States are developing the permit programs in accordance with guidance and regulations from EPA. Once EPA approves a State program that state will issue and monitor permits.

Title VI of the CAA is intended to protect stratospheric ozone by phasing out the manufacture of ozone-depleting chemicals and restrict their use and distribution. Production of Class I substances, including 15 kinds of CFCs and chloroform, were phased out (except for essential uses) in 1996.

The EPA Clean Air Technology Center, at (919) 541-0800, provides general assistance and information on CAA standards. The Stratospheric Ozone Information Hotline, at (800) 296-1996, provides general information about regulations promulgated under Title VI of the CAA, and the EPA EPCRA Hotline, at (800) 535-0202, answers questions about accidental release prevention under CAA §112(r). In addition, the Clean Air Technology Center's website includes recent CAA rules, EPA guidance documents, and updates of EPA activities (<http://www.epa.gov/ttn> then select Directory and then CATC).

VI.B Industry Specific Requirements

Since the 1960s, there has been an increased public awareness that industrial growth, as well as its inherent need for energy produced using fossil fuels, is accompanied by the release of potentially harmful pollutants into the environment. Hence, the fossil fuel electric power generation industry has become one of the most highly regulated industries. In addressing environmental issues, the industry has moved from providing not only the lowest cost energy, to providing the lowest cost energy with an acceptable impact on the environment. Air pollution control has been of most concern, with a significant percentage of the cost of a power plant going towards the purchase of air pollution control equipment. However, control of hazardous effluent discharges and proper management and disposal of solid wastes have also been key concerns. This section summarizes the current major Federal regulations affecting the fossil fuel electric power generation industry.

National Environmental Policy Act

The National Environmental Policy Act of 1969 (NEPA) applies to all Federal agencies and to Federal actions that may significantly impact the environment. The NEPA requires that all Federal agencies prepare detailed statements assessing the environmental impact of, and alternatives to, major Federal actions that may significantly affect the quality of the human environment. Implementing regulations are issued by the Council on Environmental Quality (CEQ) at 40 CFR Parts 1500-1508. NEPA implementing regulations that are most applicable to the fossil fuel electric power generation industry can be found at 40 CFR Part 6 (EPA) and 10 CFR Part 1021 (DOE). Each government agency has issued its own implementing regulations under NEPA. The types of Federal activities associated with fossil fuel electric power generating facilities that may be subject to NEPA requirements include siting, construction, and operations of federally owned facilities, federally issued NPDES, RCRA, and air permits, and federally issued operation licenses.

Each Federal activity subject to NEPA must follow certain environmental review procedures. If there is enough information to determine at the outset that the Federal action will cause a significant effect on the environment, then an environmental impact statement (EIS) must be prepared. If there is insufficient information available, an environmental assessment (EA) must be prepared to assist the agency in determining if the impacts are significant enough to require an EIS. If the assessment shows the impacts not to be significant, the agency must prepare a finding of no significant impact (FONSI). Further stages of the Federal activity may then be excluded from the NEPA requirements.

Clean Air Act

Numerous existing standards and programs under the Clean Air Act may affect the fossil fuel electric power generation industry. These regulations and programs include Title I New Source Performance Standards, Title III National Emissions Standards for Hazardous Air Pollutants, Title IV Acid Rain Program, and Title V Operating Permits Program. The NAAQS under Title I may affect the industry indirectly through permits.

National Ambient Air Quality Standards

Regulations for NAAQS do not directly affect the fossil fuel electric power generation industry because they are not applied to sources. Rather, these standards are applied to the ambient air in a particular area. Fossil fuel electric power generators may be indirectly affected by these standards if they are located in or near an area with nonattainment status. In meeting NAAQS,

States develop and implement SIPs that prescribe use of reasonably available control technologies (RACTs) for major sources. In addition, as fossil fuel electric power generation facilities are typically one of the largest emitters of criteria pollutants, they may be targeted for more stringent controls implemented through operating permits.

The NAAQS currently exist for the following criteria pollutants (40 CFR Part 50): PM₁₀, SO₂, CO, Pb, ozone, and NO_x.

On July 16, 1997, new and/or revised standards for particulate matter and ozone were promulgated. The regulations revise the current primary standard by adding a new annual PM_{2.5} (or PM “fine”) standard set at 15 micrograms per cubic meter (µg/m³) and a new 24-hour PM_{2.5} standard set at 65 µg/m³. These regulations revise the current 1-hour primary standard for ground level ozone by adding an 8-hour standard set at 0.08 ppm (the 1-hour standard will eventually be phased out).

Among the tools proposed for implementing these new ambient standards is a trading plan for emissions from utilities. The new standards will require local controls in 2004 for ozone and 2005 for particulate matter, with compliance by 2007 and 2008, respectively.

A group called the Ozone Transport Assessment Group (OTAG) was formed between EPA, the Environmental Council of States, and various industry and environmental groups. The primary objective of OTAG is the collective assessment of the ozone transport problem and the development of a strategy for reducing ozone pollution on a regional scale.

New Source Review and New Source Performance Standards

New source review (NSR) requirements in 40 CFR §52.21(b)(1)(I)(a)-(b) apply to all new facilities and may apply to expansions of existing facilities or process modifications. The NSRs are typically conducted by State agencies in accordance with their SIP. SIPs are the primary tool for meeting NAAQS and are administered through State and local agencies.

Prevention of significant deterioration (PSD) reviews are performed for areas meeting NAAQS. Nonattainment reviews are performed for areas violating the NAAQS. In nonattainment areas, permits may be issued to require new sources to meet lowest achievable emission rate (LAER) standards. Operators of the new sources must procure reductions in emission of the same pollutants from other sources in the nonattainment area in equal or greater amounts to the emissions from the new source. These “emission offsets” may be banked and traded through the State agencies. In PSD areas, permits require the best available control technology (BACT), and the

operator must conduct continuous air monitoring for one year prior to the startup of the new source to determine the effects that the new emissions may have on air quality.

Under NSPS, given at 40 CFR Part 60, EPA sets standards for LAER and BACT for the following subcategories of the fossil fuel electric power generation industry:

- Subpart D: Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction Is Commenced After August 17, 1971
- Subpart Da: Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction Is Commenced After September 18, 1978
- Subpart Db: Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
- Subpart Dc: Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
- Subpart GG: Standards of Performance for Stationary Gas Turbines.

The standards in each subcategory apply to units of a specified size and age. Table 36 provides the NSPS.

Table 36: New Source Performance Standards	
Emission	Standards
SO ₂	General standard for various levels of ng/J (lb/mm Btu) heat input and % reduction, depending on fuel type and sulfur content (see 40 CFR Subparts D, Da, Db, and Dc). For gas turbines, no gases in excess of 0.015% by volume (at 15% O ₂ by volume) or with sulfur contents in excess of 0.8% by weight shall be burned.
NO _x	Between 0.2 and 0.8 lb/mm BTU, depending on category of combustion. For gas turbines, NO _x standards specified in equation in 60.332(a)(1) or (2) as directed in 60.332(b), (c), and (d).
PM	Between 0.05 and 0.20 lb/mm BTU, unless a low nitrogen fuel is used, in which case compliance is based on results of performance tests.
Opacity	20%.

National Emission Standards for Hazardous Air Pollutants

Current regulations at 40 CFR Part 61 provide standards for eight substances identified as air toxics: vinyl chloride, mercury, beryllium, radon, radionuclides, benzene, asbestos, and arsenic. Under Title III of the CAA, EPA is required to identify source categories of 188 HAPs or toxic air pollutants and then issue (at 40 CFR Part 63) MACT standards for each source category according to a prescribed schedule. The standards are to be based on best demonstrated control technologies or practices within the regulated industry. Eight years after a MACT is installed on a source, EPA is required to evaluate the risk levels remaining at the facilities and determine whether additional controls are needed to reduce the risk to acceptable levels.

The EPA has issued an initial list of categories of major and area sources that will be subject to regulation under Section 112 (57 FR 31576). The list contains numerous sources from the fossil fuel electric power generation industry, and standards are currently being developed under the Industrial Combustion Coordinated Rulemaking (see Section VI.C.).

Acid Rain Program

The 1990 amendments to the CAA added a new provision (Title IV) to control acid deposition. Title IV of the CAAA sets primary goals to reduce annual emissions of both SO₂ and NO₂.

Upwards of 20 million tons of SO₂ are emitted annually in the United States. Most of this amount is from the burning of fossil fuels by electric utilities. Because acid rain is a problem, Title IV requires EPA to reduce SO₂ emissions to 10 million tons below the 1980 level. Reduction in SO₂ will be attained in two phases by a marketable emission allowance program (40 CFR Part 73). Phase I, which became effective in January 1995, required 110 power plants to reduce their emissions to a level equivalent to the product of an emissions rate of 2.5 pounds (lbs) of SO₂/mmBtu times an average of their 1985-1987 fuel use. Plants that use certain control technologies to meet the Phase I reduction requirements received a 2-year extension of compliance until 1997. The new law also allows for special allocation of 200,000 annual allowances per year, in each of the 5 years of Phase I, to power plants in Illinois, Indiana, and Ohio.

Under the new requirements, utilities may trade allowances within their systems and/or buy or sell allowances to and from other affected sources. Phase I facilities were allocated allowances based on historic fuel consumption and a specific emission rate. One allowance equals the right to emit one ton of SO₂. Affected facilities are required to turn into the EPA one allowance for each ton emitted in a calendar year. Unused allowances may be sold, traded, or banked by the facilities. Power plants that do not have

sufficient allowances to cover annual emissions are subject to fees and requirements to offset the excess emissions the following year.

Power plants that emit less than 1.2 lbs of SO₂/mmBtu are allowed to increase emissions by 20 percent until the year 2000.

Phase II of the CAAA SO₂ reduction requirement becomes effective January 1, 2000, and affects all utilities generating at least 25 MW of electricity. These requirements require approximately 2,128 electric power utilities to reduce emissions to a level equivalent to the product of an emissions rate of 1.2 lbs of SO₂/mmBtu times the average of their 1985-1987 fuel use. SO₂ emissions from electric utilities will be capped at 8.95 million tons per year.

Title IV of the CAAA requires a 2 million ton reduction in NO_x emissions from 1980 levels. The EPA has developed regulations to help reduce NO_x emissions that may affect the fossil fuel electric power generation industry. As in the SO₂ reduction program, the NO_x Emission Reduction Program is being implemented in two phases for two categories of coal-fired electric utility boilers. The NO_x program differs from the SO₂ program in that it neither “caps” the NO_x emissions, nor utilizes an allowance trading system.

Phase I of the program for “Group I” boilers was effective on January 1, 1996, and affected dry-bottom wall fired boilers and tangentially fired boilers that are required to meet NO_x performance standards (40 CFR Part 76). Regulations for Phase II of the NO_x reduction program were promulgated in December 1996. These rules become effective in the year 2000. These regulations set lower emission limits for Group 1 boilers. In addition, the regulation establishes initial NO_x emission limitations for Group 2 boilers. Group 2 boilers include boilers applying cell burner technology, cyclone boilers, wet bottom boilers, and other types of coal-fired boilers.

Facilities covered by the Acid Rain Program must apply for an Acid Rain Permit. Most utilities must apply for permits in either Phase I or Phase II of the program. Two categories of utility units may be eligible for exemption: small new units burning clean fuels and retired units. Some cogeneration units are not covered under the program.

To support the mandated reductions in SO₂ and NO_x, the 1990 CAAA also required EPA to issue regulations requiring facilities to install continuous emissions monitoring systems (40 CFR Part 75). Fossil fuel electric power generation units over 25 megawatts and new units under 25 megawatts that use fuel with a sulfur content greater than .05 percent by weight are required to measure and report emissions under the Acid Rain Program.

Federal/State Operating Permits Programs

Title V of the CAAA requires the development of a comprehensive permitting program to control air emissions from major stationary sources. Major sources include those that emit 100 tons/year or more of VOCs or criteria pollutants, 10 tons/year or more of any single toxic air pollutant, or 25 tons/year or more of a combination of toxic air pollutants. This program is modeled after the NPDES program under the CWA and serves to bring together all of the requirements concerning air emissions that apply to affected sources. Like the NPDES program, administration of the operating permit program is also delegated to States with approved programs.

This program requires all significant sources of air emissions to obtain permits. In general, utility fossil fuel steam electric power plants are all considered major sources, so they will most likely be required to obtain permits. Other types of fossil fuel electric power generation facilities, such as those employing small gas turbines, may not be considered a major source and may not be required to apply for a permit. Any operational change that increases emissions above specified limits will most likely necessitate permit modifications. Permit terms are determined by State regulations for delegated programs but may not exceed 5 years.

Clean Water Act

Wastewater discharges from fossil fuel electric power generation facilities released to waters of the United States are covered under the CWA. Any point source discharge is required to apply for, and obtain, an NPDES permit (40 CFR Part 122). Permits may be issued by EPA or a State, depending upon whether the State has a delegated program. The NPDES permits serve to regulate point source discharges by establishing pollutant limitations and other special conditions. Facilities discharging to a POTW may be required to obtain a permit from a POTW that has an approved pretreatment program.

Current technology-based effluent limitations guidelines and pretreatment standards for discharges from the steam electric generating point source category were promulgated in 1982 (40 CFR Part 423). The waste streams covered and parameters limited are summarized in Table 37 below.

Table 37: Waste Streams and Pollutants Regulated Under National Effluent Limitation Guidelines for the Steam Electric Generating Point Source Category	
Type of Waste Stream	BAT Effluent Limitations Guidelines
All discharges	pH , PCBs
Bottom ash transport waters and low volume waste sources	TSS, oil and grease
Chemical boiler metal cleaning wastes	TSS, oil and grease, iron, and copper
Non-chemical metal cleaning wastes	Reserved (low volume wastewater limits apply)

Table 37: Waste Streams and Pollutants Regulated Under National Effluent Limitation Guidelines for the Steam Electric Generating Point Source Category	
Type of Waste Stream	BAT Effluent Limitations Guidelines
Fly ash transport water (including economizer ash)	No discharge allowed (based on the availability of dry disposal methods and the potential for reuse of fly ash transport water)
Once-through cooling water	Total residual chlorine (TRC) or free available chlorine (FAC), depending on facility's generating capacity
Cooling tower blowdown	FAC, chromium, zinc, other 126 priority pollutants where they are found in chemicals used for cooling tower maintenance
Coal pile runoff	TSS

In general, steam electric facilities built after 1982 are considered new sources and must comply with the 1982 effluent limitations. Less stringent guidelines may apply for facilities constructed between 1974 and 1982 (see 1974 guidelines and standards). Steam electric generating facilities that have been repowered are considered new sources.

Steam electric facilities that discharge to a POTW may be required to meet pretreatment standards for existing sources (PSES) or for new sources (PSNS). General pretreatment standards applying to most industries discharging to a POTW are described in 40 CFR Part 403. Pretreatment standards applying specifically to the steam electric generating point source category are listed in 40 CFR §§423.16 and 17.

Beyond the applicable technology-based effluent limitations described above, permits may also establish technology-based limits for other pollutants based on the application of best professional judgement (BPJ). Permit limits and special conditions may also be established based on water quality considerations. Thermal limitations are often placed in permits for steam electric power plants based on Section 316(a) of the CWA and water quality considerations. Additionally, permits may require the performance of a demonstration study and implementation of control technologies to minimize adverse environmental impacts from cooling water intake structures.

Storm water discharges associated with any industrial activity onsite at a fossil fuel electric power generation facility are covered under the National Storm Water Program. Steam electric power generating activities are listed as one of the categories of industrial activities subject to the storm water permit application requirements (category vii). The regulations at 40 CFR Part 122.26 require facilities discharging storm water from 1 of the 11 categories of industrial activities to apply for a storm water permit if the storm water discharges to waters of the United States. In most permits,

facilities are required to develop and implement a storm water pollution prevention plan. However, limitations and other special conditions may be included on a case-by-case basis. Some permits may include the numeric effluent limitation guideline for coal pile runoff. Storm water discharges associated with other industrial activities at fossil fuel electric power generation facilities are typically not subject to numeric limits, however.

Resource Conservation and Recovery Act

The 1980 Solid Waste Disposal Act Amendments conditionally exempted from regulation under Subtitle C large volume wastes, including fly ash waste, bottom ash waste, boiler slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels (RCRA §3001). Section 8002(n) of RCRA directed EPA to study these wastes.

In 1993, EPA issued a regulatory determination addressing large volume wastes (fly ash, bottom ash, boiler ash, boiler slag, and flue gas emission control wastes) generated by coal-fired utility power plants, including independent power producers not engaged in any other industrial activity. The regulatory determination stated that these wastes should not be regulated as Subtitle C wastes when they are managed separately from other wastes. A similar determination for other large volume fossil fuel combustion wastes and co-managed wastes was deferred pending additional studies.

Wastes exempt from hazardous waste regulation (currently all wastes from fossil fuel combustion) are addressed by Subtitle D of RCRA (for nonhazardous solid wastes). There are currently no Federal nonhazardous waste regulations. As a result, fossil fuel electric power generation waste management is addressed solely by the States, either through their general industrial solid waste programs or through specific programs for fossil fuel combustion wastes. These State programs vary considerably.

Subtitle I of RCRA has stringent requirements for underground petroleum and hazardous substances storage tank (UST) systems with 110-gallon or greater capacity. Any storage of fuels in USTs onsite at a fossil fuel electric power generation facility would be covered under these regulations at 40 CFR Part 280.

Subtitle C of RCRA provides for a comprehensive cradle to grave system of management for hazardous waste and includes rules governing waste disposal on land; recycling and generators; and treatment, storage, or disposal facilities (TSDFs). Low volume fossil fuel combustion wastes not co-managed with ash, slag, or flue gas desulfurization wastes and other wastes that are not directly associated with the combustion process are not exempted

from hazardous waste regulation. As such, they are hazardous wastes if they are listed as hazardous wastes from non-specific sources (e.g., spent solvents) or if they exhibit one or more of the RCRA hazardous waste characteristics of toxicity, corrosivity, reactivity, and ignitability. The identification of specific listed wastes and the definitions of the hazardous waste characteristics are listed in 40 CFR Part 261.

Fossil fuel electric power generating plants do not typically generate large quantities of hazardous waste. Furthermore, the requirements and costs of operating an onsite hazardous waste TSDf are extensive. Therefore, most electric power generating facilities send any generated hazardous waste to offsite RCRA-permitted commercial TSDfs for permanent disposal.

Some steam electric power generating plants co-fire their boilers with hazardous wastes (e.g., spent solvents), along with their primary fossil fuel source. Such facilities are subject to RCRA regulation under the BIF Rule (40 CFR Part 266, Subpart H). The BIF Rule includes operating condition requirements, as well as testing requirements, for air emissions and residuals to ensure adequate destruction of toxic constituents.

Emergency Planning and Community Right-to-Know Act

In a recent rulemaking (62 FR 23834, May 1, 1997), EPA expanded the list of industry groups subject to reporting requirements under Section 313 of EPCRA (61 FR 33587). The expanded list of industry groups includes electric utilities classified in the following SIC codes: 4911 Electric Services, 4931 Electric and Other Services Combined, and 4939 Combination Utilities, Not Elsewhere Classified. EPCRA Section 313 now requires electric generating facilities that combust coal and/or oil for the purpose of generating electricity for distribution in commerce to evaluate their chemical use and management activities to determine potential reporting responsibilities. Section 313 establishes annual requirements for amounts released and otherwise managed of "section 313 chemicals" (a list of more than 650 chemicals and chemical categories).

For each Section 313 chemical or chemical category, covered facilities must report total routine and accidental amounts entering each environmental media, as well as onsite waste management via, and offsite transfers for, disposal, waste treatment, energy recovery and recycling, and onsite source reduction activities. This information is submitted on the TRI reporting form called Form R if the facility has met or exceeded certain thresholds. The first period of reporting for this industry will be on or before July 1, 1999, for the period from January 1 to December 31, 1998. Reporting will be required annually thereafter. For additional information on these new TRI reporting requirements, contact the Emergency Planning and Right-to-Know Hotline

at (800) 535-0202 (in Virginia and Alaska (703) 412-9877; TDD (800) 553-7672).

VI.C Pending and Proposed Regulatory Requirements

Clean Air Act Amendments of 1990

Hazardous Air Pollutants

In response to requirements under Section 112 of the CAA as well as Section 129, EPA is developing a unified set of Federal air emission regulations for industrial combustion sources. This rulemaking effort is being called the Industrial Combustion Coordinated Rulemaking (ICCR).

The ICCR will cover sources from industrial/institutional/commercial boiler, process heaters, industrial/commercial and other solid waste (not including hazardous, medical, or large municipal) incinerators, stationary gas turbines, and stationary internal combustion engines. These sources are not limited to use of fossil fuels and have the potential to emit both HAPs and criteria pollutants. This rulemaking effort will produce approximately seven separate regulations, six of which are expected to be finalized by November 2000. For additional information on the ICCR, contact Fred Porter, U.S. EPA Office of Air and Radiation, at (919) 541-5251.

Section 112(n) requires that EPA perform studies to evaluate the health risks associated with emissions of toxic air pollutants from electric utility steam generating units. Electric utility steam generating units are defined as any fossil fuel-fired combustion unit of more than 25 MW electric that serves a generator that produces electricity for sale. Cogenerators that supply more than one-third of their potential electric output capacity and more than 25 MW output to any utility power distribution system for sale will also be covered. A preliminary study has been completed and was issued as an interim final in October 1996. Additional studies will be performed, as well as an in-depth study of potential public health concerns due to mercury emissions from utilities. These findings will be published in a report to Congress at a later date and will include costs and technologies available to control these emissions and recommendations as to whether regulations are needed for air toxics emissions from this industry. For additional information on this study, contact Bill Maxwell, U.S. EPA Office of Air and Radiation, at (919) 541-5430.

Clean Water Act

Effluent Limitations Guidelines and Standards and Pretreatment Standards for the Steam Electric Point Source Category

The existing 1982 effluent limitations guidelines and standards and pretreatment standards for wastewater discharges from the Steam Electric Point Source Category are currently being reviewed by the Office of Water. A preliminary study has been completed by the Office of Water to evaluate the guidelines and standards based on current technical feasibility, environmental factors, economic impacts, and utility to permit writers. The study was performed because the steam electric power generating industrial category is considered as a candidate for possible regulatory revisions in the future. For additional information, contact Joe Daly, U.S. EPA Office of Water, at (202) 260-7186.

Cooling Water Intake Structure Regulations

Section 316(b) of the Clean Water Act requires that "...any standard established pursuant to Section 301 or 306... and applicable to a point source shall require that the location, design construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact." Since fossil fuel electric power generators with steam turbines withdraw by far the greatest quantity of cooling water of any single industrial sector, it is expected that this industry will be the most affected by this requirement. Although some EPA regions and States have developed programs to minimize impacts from cooling water structures, no uniform national standards or implementing regulations are currently in force. As set forth in a consent decree (*Cronin v. Browner*), EPA has initiated the information collection activities needed to develop proposed regulations to address impacts from the intake of cooling water by 1999. Final EPA action is scheduled for the year 2001. For additional information on the Section 316(b) rulemaking effort, contact Deborah Nagle, U.S. EPA Office of Water, at (202) 260-2656.

Resource Conservation and Recovery Act

A regulatory determination on whether large volume wastes at utility oil-fired, nonutility coal- and oil-fired, and fluidized bed combustion power plants and co-managed large volume wastes at all utility and nonutility coal- and oil-fired electric generation facilities should be considered hazardous wastes under Subtitle C is expected to be finalized in 1998, pending additional data collection. For additional information, contact Dennis Ruddy, U.S. EPA Office of Solid Waste, at (703) 308-8430.

VII. COMPLIANCE AND ENFORCEMENT HISTORY

Until recently, EPA has focused much of its attention on measuring compliance with specific environmental statutes. This approach allows the EPA to track compliance with CAA, RCRA, CWA, and other environmental statutes. Within the last several years, the EPA has begun to supplement single-media compliance indicators with facility-specific, multimedia indicators of compliance. In doing so, EPA is in a better position to track compliance with all statutes at the facility level and within specific industrial sectors.

A major step in building the capacity to compile multimedia data for industrial sectors was the creation of EPA's IDEA system. The IDEA has the capacity to "read into" EPA's single-media databases, extract compliance records, and match the records to individual facilities. The IDEA system can match air, water, waste, toxics/pesticides/EPCRA, TRI, and enforcement docket records for a given facility and generate a list of historical permit, inspection, and enforcement activity. IDEA also has the capability to analyze data by geographic area and corporate holder. As the capacity to generate multimedia compliance data improves, EPA will make available more in-depth compliance and enforcement information. Additionally, sector-specific measures of success for compliance assistance efforts are being developed.

Compliance and Enforcement Profile Description

Using inspection, violation and enforcement data from the IDEA system, this section provides information regarding the historical compliance and enforcement activity of this sector. In order to mirror the facility universe reported in the Toxic Chemical Profile, the data reported within this section consist of records only from the TRI reporting universe. With this decision, the selection criteria are consistent across sectors with certain exceptions. For the sectors that do not normally report to the TRI program, data have been provided from EPA's Facility Indexing System (FINDS) which tracks facilities in all media databases. Please note, in this section, EPA does not attempt to define the actual number of facilities that fall within each sector. Instead, the section portrays the records of a subset of facilities within the sector that are well defined within EPA databases.

As a check on the relative size of the full sector universe, most notebooks contain an estimated number of facilities within the sector according to the Bureau of Census. For the fossil fuel electric power generation industry, statistics about the industry are collected by the DOE EIA (see Section II). With sectors dominated by small businesses, such as metal finishers and printers, the reporting universe within EPA databases may be small in

comparison to Census data. However, the group selected for inclusion in this data analysis section should be consistent with this sector's general make-up.

Following this introduction is a list defining each data column presented within this section. These values represent a retrospective summary of inspections and enforcement actions, and reflect solely EPA, State, and local compliance assurance activities that have been entered into EPA databases. To identify any changes in trends, the EPA ran two data queries: one for the past five calendar years (April 1, 1992, to March 31, 1997) and the other for the most recent 12-month period (April 1, 1996, to March 31, 1997). The 5-year analysis gives an average level of activity for that period for comparison to the more recent activity.

Because most inspections focus on single-media requirements, the data queries presented in this section are taken from single media databases. These databases do not provide data on whether inspections are state/local or led by EPA. However, the table breaking down the universe of violations does give a crude measurement of EPA's and States' efforts within each media program. The presented data illustrate the variations across EPA regions for certain sectors.^a This variation may be attributable to state/local data entry variations, specific geographic concentrations, proximity to population centers, sensitive ecosystems, highly toxic chemicals used in production, or historical noncompliance. Hence, the exhibited data do not rank regional performance or necessarily reflect which regions may have the most compliance problems.

Compliance and Enforcement Data Definitions

Facility Indexing System - This system assigns a common facility number to EPA single-media permit records. The FINDS identification number allows EPA to compile and review all permit, compliance, enforcement, and pollutant release data for any given regulated facility.

Integrated Data for Enforcement Analysis - This data integration system can retrieve information from the major EPA program office databases. IDEA uses the FINDS identification number to link separate data records from EPA's databases. This allows retrieval of records from across media or statutes for any given facility, thus creating a "master list" of records for that facility. Some of the data systems accessible through IDEA are: AIRS (Office of Air and Radiation), PCS (Office of Water), RCRIS (Resource

^a EPA Regions include the following states: I (CT, MA, ME, RI, NH, VT); II (NJ, NY, PR, VI); III (DC, DE, MD, PA, VA, WV); IV (AL, FL, GA, KY, MS, NC, SC, TN); V (IL, IN, MI, MN, OH, WI); VI (AR, LA, NM, OK, TX); VII (IA, KS, MO, NE); VIII (CO, MT, ND, SD, UT, WY); IX (AZ, CA, HI, NV, Pacific Trust Territories); X (AK, ID, OR, WA).

Conservation and Recovery Information System, Office of Solid Waste), NCDB (National Compliance Data Base, Office of Prevention, Pesticides, and Toxic Substances), CERCLIS (Comprehensive Environmental and Liability Information System, Superfund), and TRIS (Toxic Release Inventory System). IDEA also contains information from outside sources such as Dun and Bradstreet and the Occupational Safety and Health Administration (OSHA). Most data queries displayed in Sections IV and VII of this notebook were conducted using IDEA.

Data Table Column Heading Definitions

Facilities in Search are based on the universe of TRI reporters within the listed SIC code range. For industries not covered under TRI reporting requirements (metal mining, nonmetallic mineral mining, electric power generation, ground transportation, water transportation, and dry cleaning), or industries in which only a very small fraction of facilities report to TRI (e.g., printing), the notebook uses the FINDS universe for executing data queries. The SIC code range selected for each search is defined by each notebook's selected SIC code coverage described in Section II.

Facilities Inspected indicates the level of EPA and state agency inspections for the facilities in this data search. These values show what percentage of the facility universe is inspected in a one-year or five-year period.

Number of Inspections measures the total number of inspections conducted in this sector. An inspection event is counted each time it is entered into a single media database.

Average Time Between Inspections provides an average length of time, expressed in months, between compliance inspections at a facility within the defined universe.

Facilities with One or More Enforcement Actions expresses the number of facilities that were the subject of at least one enforcement action within the defined time period. This category is broken down further into federal and state actions. Data are obtained for administrative, civil/judicial, and criminal enforcement actions. Administrative actions include Notices of Violation (NOVs). A facility with multiple enforcement actions is only counted once in this column, e.g., a facility with three enforcement actions counts as one facility.

Total Enforcement Actions describes the total number of enforcement actions identified for an industrial sector across all environmental statutes. A facility with multiple enforcement actions is counted multiple times, e.g., a facility with three enforcement actions counts as three.

State Lead Actions shows what percentage of the total enforcement actions are taken by state and local environmental agencies. Varying levels of use by states of EPA data systems may limit the volume of actions recorded as state enforcement activity. Some states extensively report enforcement activities into EPA data systems, while other states may use their own data systems.

Federal Lead Actions shows what percentage of the total enforcement actions are taken by the United States Environmental Protection Agency. This value includes referrals from state agencies. Many of these actions result from coordinated or joint state/federal efforts.

Enforcement to Inspection Rate is a ratio of enforcement actions to inspections, and is presented for comparative purposes only. This ratio is a rough indicator of the relationship between inspections and enforcement. It relates the number of enforcement actions and the number of inspections that occurred within the one-year or five-year period. This ratio includes the inspections and enforcement actions reported under the CWA, CAA, and RCRA. Inspections and actions from the TSCA/FIFRA/ EPCRA database are not factored into this ratio because most of the actions taken under these programs are not the result of facility inspections. Also, this ratio does not account for enforcement actions arising from non-inspection compliance monitoring activities (e.g., self-reported water discharges) that can result in enforcement action within the CAA, CWA, and RCRA.

Facilities with One or More Violations Identified indicates the percentage of inspected facilities having a violation identified in one of the following data categories: In Violation or Significant Violation Status (CAA); Reportable Noncompliance, Current Year Noncompliance, Significant Noncompliance (CWA); Noncompliance and Significant Noncompliance (FIFRA, TSCA, and EPCRA); Unresolved Violation and Unresolved High Priority Violation (RCRA). The values presented for this column reflect the extent of noncompliance within the measured time frame, but do not distinguish between the severity of the noncompliance. Violation status may be a precursor to an enforcement action, but does not necessarily indicate that an enforcement action will occur.

Media Breakdown of Enforcement Actions and Inspections -- four columns identify the proportion of total inspections and enforcement actions within EPA air, water, waste, and TSCA/FIFRA/EPCRA databases. Each column is a percentage of either the "Total Inspections," or the "Total Actions" column.

VII.A Fossil Fuel Electric Power Generation Industry Compliance History

This section examines the historical enforcement and compliance data on the fossil fuel electric power generation sector. As noted earlier, these data were obtained from EPA's IDEA system. The five exhibits within this section provide both a 5-year and a 1-year review of the data from the sector and also provide data from other sectors for comparison purposes. It should be noted that the data are accessed in the IDEA database system through SIC codes. Therefore, only those facilities whose primary SIC codes indicate the potential for power generation activities can be accessed (see Section II). This means that the data retrieved from IDEA may be more inclusive (e.g., include transmission and distribution facilities). Other industry facilities that have associated power generation activities cannot be identified because their primary SIC codes do not indicate power generation.

Table 38 provides an overview of the reported compliance and enforcement data for the fossil fuel electric power generations sector over the past 5 years (April 1992 to April 1997). These data are also broken out by EPA Regions thereby permitting geographical comparisons. A few points evident from the data are listed below. As shown, 3,270 facilities were identified through IDEA with SIC codes that indicate power generation may be occurring (see discussion above). Of those, approximately 66 percent (2,166) were inspected in the last 5 years. Other points of interest include:

- 14,210 inspections were conducted over the last 5 years. Of the 3,166 facilities inspected, on average, each received over 6 inspections in the past 5-year period.
- The 14,210 inspections resulted in 403 facilities having enforcement actions taken against them. At those 403 facilities, there were a total of 789 enforcement actions; therefore, each facility averaged nearly 2 enforcement actions over the 5-year period.
- The average enforcement to inspection rate is 0.06, with the rate across the regions ranging from 0.02 to 0.13. There appears to be no correlation between State versus Federal lead on the inspections and the enforcement to inspection rate.

Table 38: Five-Year Enforcement and Compliance Summary for the Fossil Fuel Electric Power Industry									
A	B	C	D	E	F	G	H	I	J
Region	Facilities in Search	Facilities Inspected	Number of Inspections	Average Months Between Inspections	Facilities with 1 or More Enforcement Actions	Total Enforcement Actions	Percent State Lead Actions	Percent Federal Lead Actions	Enforcement to Inspection Rate
I	250	140	664	23	36	55	84%	16%	0.08
II	269	199	1,455	11	75	187	84%	16%	0.13
III	305	221	1,997	9	57	130	87%	13%	0.07
IV	559	353	3,039	11	45	84	82%	18%	0.03
V	552	344	2,287	14	76	134	69%	31%	0.06
VI	315	222	1,079	18	30	61	54%	46%	0.06
VII	409	259	1,170	21	22	28	36%	64%	0.02
VIII	134	91	643	13	15	35	60%	40%	0.05
IX	273	251	1622	10	38	57	84%	16%	0.04
X	204	86	254	48	9	18	61%	39%	0.07
TOTAL	3,270	2,166	14,210	14	403	789	76%	24%	0.06

VII.B Comparison of Enforcement Activity Between Selected Industries

Tables 39 and 40 allow the compliance history of the fossil fuel electric power generation sector to be compared to the other industries covered by the industry sector notebooks. Comparisons between Tables 39 and 40 permit the identification of trends in compliance and enforcement records of the various industries by comparing data covering the last 5 years (April 1992 to April 1997) to that of the past year (April 1996 to April 1997). As shown in the data, the 3,270 fossil fuel electric power generation facilities is the sixth largest number of facilities identified through IDEA, with ground transportation having the most facilities with 7,786. However, while approximately 66 percent of the fossil fuel electric power generation facilities have been inspected in the past 5 years, only 41 percent of the ground transportation facilities have been inspected. Other points of interest from the 5-year summary include:

- The number of inspections over the past 5 years for fossil fuel electric power generation facilities (14,210) is more than 3 times the amount conducted in most other sectors.
- The enforcement to inspection rate of 0.06 over the past 5 years is one of the lower rates of the listed sectors.

Points of interest from the 1-year summary include:

- The 1,318 fossil fuel electric power generation facilities inspected in the past year places this sector among the top four sectors for number of facilities inspected.
- The total number of inspections in this sector is 2,430 which compares with the number of inspections performed in the ground transportation and non-metallic mining sectors, but is 1.5 to 17 times more than the other sectors which range from 1,436 down to 141.
- The enforcement to inspection rate of 0.06 is about average among all the sectors, with the lowest being 0.01 (dry cleaning) and the highest being 0.23 (petroleum refining). This is relatively constant with the 5-year average for the fossil fuel electric power generation sector.

Tables 41 and 42 provide a more in-depth comparison between the fossil fuel electric power generation sector and others by organizing inspection and enforcement data by environmental statute. As in the previous Tables (Tables 39 and 40), the data cover the last 5 years (Table 41) and the last

Table 39: Five-Year Enforcement and Compliance Summary for Selected Industries

A	B	C	D	E	F	G	H	I	J
Industry Sector	Facilities in Search	Facilities Inspected	Number of Inspections	Average Months Between Inspections	Facilities with 1 or More Enforcement Actions	Total Enforcement Actions	Percent State Lead Actions	Percent Federal Lead Actions	Enforcement to Inspection Rate
Metal Mining	1,232	378	1,600	46	63	111	53%	47%	0.07
Coal Mining	3,256	741	3,748	52	88	132	89%	11%	0.04
Oil and Gas Extraction	4,676	1,902	6,071	46	149	309	79%	21%	0.05
Non-Metallic Mineral Mining	5,256	2,803	12,826	25	385	622	77%	23%	0.05
Textiles	355	267	1,465	15	53	83	90%	10%	0.06
Lumber and Wood	712	473	2,767	15	134	265	70%	30%	0.10
Furniture	499	386	2,379	13	65	91	81%	19%	0.04
Pulp and Paper	484	430	4,630	6	150	478	80%	20%	0.10
Printing	5,862	2,092	7,691	46	238	428	88%	12%	0.06
Inorganic Chemicals	441	286	3,087	9	89	235	74%	26%	0.08
Resins and Manmade Fibers	329	263	2,430	8	93	219	76%	24%	0.09
Pharmaceuticals	164	129	1,201	8	35	122	80%	20%	0.10
Organic Chemicals	425	355	4,294	6	153	468	65%	35%	0.11
Agricultural Chemicals	263	164	1,293	12	47	102	74%	26%	0.08
Petroleum Refining	156	148	3,081	3	124	763	68%	32%	0.25
Rubber and Plastic	1,818	981	4,383	25	178	276	82%	18%	0.06
Stone, Clay, Glass and Concrete	615	388	3,474	11	97	277	75%	25%	0.08
Iron and Steel	349	275	4,476	5	121	305	71%	29%	0.07
Metal Castings	669	424	2,535	16	113	191	71%	29%	0.08
Nonferrous Metals	203	161	1,640	7	68	174	78%	22%	0.11
Fabricated Metal Products	2,906	1,858	7,914	22	365	600	75%	25%	0.08
Electronics	1,250	863	4,500	17	150	251	80%	20%	0.06
Automobile Assembly	1,260	927	5,912	13	253	413	82%	18%	0.07
Shipbuilding and Repair	44	37	243	9	20	32	84%	16%	0.13
Ground Transportation	7,786	3,263	12,904	36	375	774	84%	16%	0.06
Water Transportation	514	192	816	38	36	70	61%	39%	0.09
Air Transportation	444	231	973	27	48	97	88%	12%	0.10
Fossil Fuel Electric Power	3,270	2,166	14,210	14	403	789	76%	24%	0.06
Dry Cleaning	6,063	2,360	3,813	95	55	66	95%	5%	0.02

Table 40: One-Year Enforcement and Compliance Summary for Selected Industries

A Industry Sector	B Facilities in Search	C Facilities Inspected	D Number of Inspections	E Facilities with 1 or More Violations		F Facilities with 1 or more Enforcement Actions		G Total Enforcement Actions	H Enforcement to Inspection Rate
				Number	Percent*	Number	Percent*		
Metal Mining	1,232	142	211	102	72%	9	6%	10	0.05
Coal Mining	3,256	362	765	90	25%	20	6%	22	0.03
Oil and Gas Extraction	4,676	874	1,173	127	15%	26	3%	34	0.03
Non-Metallic Mineral Mining	5,256	1,481	2,451	384	26%	73	5%	91	0.04
Textiles	355	172	295	96	56%	10	6%	12	0.04
Lumber and Wood	712	279	507	192	69%	44	16%	52	0.10
Furniture	499	254	459	136	54%	9	4%	11	0.02
Pulp and Paper	484	317	788	248	78%	43	14%	74	0.09
Printing	5,862	892	1,363	577	65%	28	3%	53	0.04
Inorganic Chemicals	441	200	548	155	78%	19	10%	31	0.06
Resins and Manmade Fibers	329	173	419	152	88%	26	15%	36	0.09
Pharmaceuticals	164	80	209	84	105%	8	10%	14	0.07
Organic Chemicals	425	259	837	243	94%	42	16%	56	0.07
Agricultural Chemicals	263	105	206	102	97%	5	5%	11	0.05
Petroleum Refining	156	132	565	129	98%	58	44%	132	0.23
Rubber and Plastic	1,818	466	791	389	83%	33	7%	41	0.05
Stone, Clay, Glass and Concrete	615	255	678	151	59%	19	7%	27	0.04
Iron and Steel	349	197	866	174	88%	22	11%	34	0.04
Metal Castings	669	234	433	240	103%	24	10%	26	0.06
Nonferrous Metals	203	108	310	98	91%	17	16%	28	0.09
Fabricated Metal	2,906	849	1,377	796	94%	63	7%	83	0.06
Electronics	1,250	420	780	402	96%	27	6%	43	0.06
Automobile Assembly	1,260	507	1,058	431	85%	35	7%	47	0.04
Shipbuilding and Repair	44	22	51	19	86%	3	14%	4	0.08
Ground Transportation	7,786	1,585	2,499	681	43%	85	5%	103	0.04
Water Transportation	514	84	141	53	63%	10	12%	11	0.08
Air Transportation	444	96	151	69	72%	8	8%	12	0.08
Fossil Fuel Electric Power	3,270	1,318	2,430	804	61%	100	8%	135	0.06
Dry Cleaning	6,063	1,234	1,436	314	25%	12	1%	16	0.01

Table 41: Five-Year Inspection and Enforcement Summary by Statute for Selected Industries

Industry Sector	Facilities Inspected	Total Inspections	Total Enforcement Actions	Clean Air Act		Clean Water Act		RCRA		FIFRA/TSCA/EPCRA/Other	
				% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions
Metal Mining	378	1,600	111	39%	19%	52%	52%	8%	12%	1%	17%
Coal Mining	741	3,748	132	57%	64%	38%	28%	4%	8%	1%	1%
Oil and Gas Extraction	1,902	6,071	309	75%	65%	16%	14%	8%	18%	0%	3%
Non-Metallic Mineral Mining	2,803	12,826	622	83%	81%	14%	13%	3%	4%	0%	3%
Textiles	267	1,465	83	58%	54%	22%	25%	18%	14%	2%	6%
Lumber and Wood	473	2,767	265	49%	47%	6%	6%	44%	31%	1%	16%
Furniture	386	2,379	91	62%	42%	3%	0%	34%	43%	1%	14%
Pulp and Paper	430	4,630	478	51%	59%	32%	28%	15%	10%	2%	4%
Printing	2,092	7,691	428	60%	64%	5%	3%	35%	29%	1%	4%
Inorganic Chemicals	286	3,087	235	38%	44%	27%	21%	34%	30%	1%	5%
Resins and Manmade Fibers	263	2,430	219	35%	43%	23%	28%	38%	23%	4%	6%
Pharmaceuticals	129	1,201	122	35%	49%	15%	25%	45%	20%	5%	5%
Organic Chemicals	355	4,294	468	37%	42%	16%	25%	44%	28%	4%	6%
Agricultural Chemicals	164	1,293	102	43%	39%	24%	20%	28%	30%	5%	11%
Petroleum Refining	148	3,081	763	42%	59%	20%	13%	36%	21%	2%	7%
Rubber and Plastic	981	4,383	276	51%	44%	12%	11%	35%	34%	2%	11%
Stone, Clay, Glass and Concrete	388	3,474	277	56%	57%	13%	9%	31%	30%	1%	4%
Iron and Steel	275	4,476	305	45%	35%	26%	26%	28%	31%	1%	8%
Metal Castings	424	2,535	191	55%	44%	11%	10%	32%	31%	2%	14%
Nonferrous Metals	161	1,640	174	48%	43%	18%	17%	33%	31%	1%	10%
Fabricated Metal	1,858	7,914	600	40%	33%	12%	11%	45%	43%	2%	13%
Electronics	863	4,500	251	38%	32%	13%	11%	47%	50%	2%	7%
Automobile Assembly	927	5,912	413	47%	39%	8%	9%	43%	43%	2%	9%
Shipbuilding and Repair	37	243	32	39%	25%	14%	25%	42%	47%	5%	3%
Ground Transportation	3,263	12,904	774	59%	41%	12%	11%	29%	45%	1%	3%
Water Transportation	192	816	70	39%	29%	23%	34%	37%	33%	1%	4%
Air Transportation	231	973	97	25%	32%	27%	20%	48%	48%	0%	0%
Fossil Fuel Electric Power	2,166	14,210	789	57%	59%	32%	26%	11%	10%	1%	5%
Dry Cleaning	2,360	3,813	66	56%	23%	3%	6%	41%	71%	0%	0%

Fossil Fuel Electric Power Generation Section VII. Compliance and Enforcement History

Table 42: One-Year Inspection and Enforcement Summary by Statute for Selected Industries

Industry Sector	Facilities Inspected	Total Inspections	Total Enforcement Actions	Clean Air Act		Clean Water Act		RCRA		FIFRA/TSCA/EPCRA/Other	
				% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions
Metal Mining	142	211	10	52%	0%	40%	40%	8%	30%	0%	30%
Coal Mining	362	765	22	56%	82%	40%	14%	4%	5%	0%	0%
Oil and Gas Extraction	874	1,173	34	82%	68%	10%	9%	9%	24%	0%	0%
Non-Metallic Mineral Mining	1,481	2,451	91	87%	89%	10%	9%	3%	2%	0%	0%
Textiles	172	295	12	66%	75%	17%	17%	17%	8%	0%	0%
Lumber and Wood	279	507	52	51%	30%	6%	5%	44%	25%	0%	40%
Furniture	254	459	11	66%	45%	2%	0%	32%	45%	0%	9%
Pulp and Paper	317	788	74	54%	73%	32%	19%	14%	7%	0%	1%
Printing	892	1,363	53	63%	77%	4%	0%	33%	23%	0%	0%
Inorganic Chemicals	200	548	31	35%	59%	26%	9%	39%	25%	0%	6%
Resins and Mammade Fibers	173	419	36	38%	51%	24%	38%	38%	5%	0%	5%
Pharmaceuticals	80	209	14	43%	71%	11%	14%	45%	14%	0%	0%
Organic Chemicals	259	837	56	40%	54%	13%	13%	47%	34%	0%	0%
Agricultural Chemicals	105	206	11	48%	55%	22%	0%	30%	36%	0%	9%
Petroleum Refining	132	565	132	49%	67%	17%	8%	34%	15%	0%	10%
Rubber and Plastic	466	791	41	55%	64%	10%	13%	35%	23%	0%	0%
Stone, Clay, Glass and Concrete	255	678	27	62%	63%	10%	7%	28%	30%	0%	0%
Iron and Steel	197	866	34	52%	47%	23%	29%	26%	24%	0%	0%
Metal Castings	234	433	26	60%	58%	10%	8%	30%	35%	0%	0%
Nonferrous Metals	108	310	28	44%	43%	15%	20%	41%	30%	0%	7%
Fabricated Metal	849	1,377	83	46%	41%	11%	2%	43%	57%	0%	0%
Electronics	420	780	43	44%	37%	14%	5%	43%	53%	0%	5%
Automobile Assembly	507	1,058	47	53%	47%	7%	6%	41%	47%	0%	0%
Shipbuilding and Repair	22	51	4	54%	0%	11%	50%	35%	50%	0%	0%
Ground Transportation	1,585	2,499	103	64%	46%	11%	10%	26%	44%	0%	1%
Water Transportation	84	141	11	38%	9%	24%	36%	38%	45%	0%	9%
Air Transportation	96	151	12	28%	33%	15%	42%	57%	25%	0%	0%
Fossil Fuel Electric Power	1,318	2,430	135	59%	73%	32%	21%	9%	5%	0%	0%
Dry Cleaning	1,234	1,436	16	69%	56%	1%	6%	30%	38%	0%	0%

one year (Table 42) to facilitate the identification of recent trends. Points of interest from the 5-year summary include:

- Compared to other sectors, the fossil fuel electric power generation sector has one of the higher percentages of CAA inspections (57%) and one of the lower percentages of RCRA inspections (11%), when measured against the total number of inspections conducted. As a result, it has one of the higher percentages of CAA enforcement actions (59%) and one of the lowest percentages of RCRA enforcement actions (10%), when measured against total enforcement actions.

The 1-year inspection and enforcement summary reflects similar numbers to those from the past 5 years. No notable exceptions are apparent.

VII.C Review of Major Legal Actions

Major Cases/Supplemental Environmental Projects

This section provides summary information about major cases that have affected this sector, and a list of Supplemental Environmental Projects (SEPs).

VII.C.1 Review of Major Cases

As shown in the previous tables, the number of enforcement actions taken over the past 5 years, when compared to the number of inspections conducted, is minimal. Even though there have been 871 total enforcement actions, major cases involving fossil fuel electric power generation facilities are rare. Since 1992, however, there have been at least 13 actions against such facilities.

The 13 cases were broken out as follows:

- 6 cases under the CAA (asbestos NESHAPs, NO_x monitoring violations, and SO₂ violations)
- 2 cases under the CWA (NPDES permit violation, wetlands)
- 2 cases under TSCA (PCBs)
- 2 cases under EPCRA (release in excess of reportable quantities)
- 1 multimedia case (CWA, EPCRA, and TSCA).

The average penalty associated with these cases was just more than \$150,000. In addition, two SEPs were associated with the 13 cases. Those are discussed in more detail in the following section.

The two most significant cases against fossil fuel electric power generation facilities included CWA violations by Potomac Electric Power Company

(PEPCO) and CAA violations by Public Service Electric & Gas (PSE&G). In the PEPCO case, the violations occurred from 1988 to 1993, during which time a site supervisor either pumped or oversaw the pumping of polluted water from holding ponds into an adjacent swamp. PEPCO discovered the illegal discharge and informed EPA. The consent decree provides for a penalty of \$975,000. Because the violation was self-disclosed, no criminal charges were brought against the company or its officers.

In *United States v. Public Service Electric & Gas*, PSE&G was charged with violating the CAA, specifically the asbestos NESHAP. While commuting home from work, an off-duty EPA inspector noticed a pile of old pipes laying in a yard. A subsequent inspection of the old gas-cracking operation revealed the NESHAP violations. The PSE&G was required to pay a civil penalty of \$230,000 and complete an extensive worker training and notification program.

VII.C.2 Supplementary Environmental Projects (SEPs)

SEPs are compliance agreements that reduce a facility's non-compliance penalty in return for an environmental project that exceeds the value of the reduction. Often, these projects fund pollution prevention activities that can reduce the future pollutant loadings of a facility. Information on SEP cases can be accessed via the internet at EPA's Enviro\$en\$e website: <http://es.inel.gov/sep>.

As mentioned above, there were two SEPs at fossil fuel electric power generation facilities. The SEPs were negotiated with IES Utilities, Incorporated, of Cedar Rapids, Iowa, and Consumers Power Company of West Olive, Michigan.

The case against IES Utilities, Incorporated, was the first acid rain administrative penalty action in the country. The complaint alleged IES failed to complete timely certification testing of the acid rain continuous emission monitors required for SO₂, NO_x, CO₂, and volumetric flow at several of its generating stations. As part of the settlement, IES agreed to a SEP involving the purchase and permanent surrender by the utility to EPA of 589 SO₂ allowances. Each allowance constitutes an authorization to emit during or after a specified calendar year one ton of SO₂. The value of the allowances permanently removed from the market was \$76,570 at the time of the settlement. IES was also required to pay a penalty of \$25,630 to settle the claims.

In the Consumers Power Company case, the company agreed to carry out three SEPs at a total estimated cost of \$247,742. The projects include (1) converting heat exchangers from ethylene glycol to propylene glycol, which is 300 times less toxic, (2) sending information on EPCRA requirements to

an estimated 3,000 facilities in Michigan, and (3) conducting an outreach program on the EPCRA Section 302 notification requirement to rural communities. The company must also certify its compliance with EPCRA. In its complaint, EPA alleged that the company failed to notify authorities about an accidental release of 1,400 pounds of sodium hypochlorite.

VIII. COMPLIANCE ASSURANCE ACTIVITIES AND INITIATIVES

This section highlights the activities undertaken by this industry sector and public agencies to voluntarily improve the sector's environmental performance. These activities include those initiated independently by industrial trade associations. In this section, the notebook also contains a listing and description of national and regional trade associations.

VIII.A. Sector-related Environmental Programs and Activities

Clean Air Power Initiative

The goal of the Clean Air Power Initiative (CAPI) is to improve air pollution control efforts within the electric power generating industry by developing an integrated regulatory strategy for three major pollutants emitted by electric power generators: SO₂, NO_x, and air toxics (specifically, mercury). The project was initiated in 1995 by EPA's Assistant Administrator for Air and Radiation. Through the Initiative, EPA hopes to provide the electric power industry with greater regulatory flexibility and cost savings while achieving environmental goals for ozone, fine particles, regional haze, and toxics. The Initiative will use existing CAA authority where possible, although ultimately new congressional authority may be required. The EPA believes focusing on regional reductions of the pollutants and implementing a "cap and trade" approach for some pollutants, such as NO_x, SO₂, and mercury, would be most effective. The EPA is meeting with representatives of the power industry, State and local officials, environmental groups, and pollution control vendors to obtain their views and input for the regulatory framework for the Initiative. (Contact: Linda Reidt Critchfield, at (202) 233-9087. Website: <http://www.epa.gov/capi>).

EPA Regional Compliance And Enforcement Activities

The EPA Region VIII has focused on enforcement and compliance activities for coal-fired power plants. This industrial sector was targeted by Region VIII because they have 38 significant operating plants (i.e., generate greater than 25 MW electricity). The region has experienced ongoing compliance issues related to the new Acid Rain Program, impacts from plants in PSD Class I areas, and impacts in nonattainment areas. The goal of this EPA regional compliance and enforcement initiative is to comprehensively evaluate the compliance status of the facilities. The region is also evaluating any environmental justice issues due to the location of the facilities. States in Region VIII are participating in the sector initiative by performing annual air program and NPDES permit inspections on a yearly basis. South Dakota has conducted multimedia inspections at two coal-fired power plants.

Department of Energy Environmental Research Programs

The DOE maintains numerous laboratories and field facilities that perform research and development type activities. The following facilities are of interest to the fossil fuel electric power generation industry and environmental compliance:

- **Argonne National Laboratory:** The Argonne National Laboratory (ANL) conducts applied research and engineering development in energy and environmental technologies, high performance computing, and scientific research in physical and life sciences. The Energy Systems Division of ANL focuses its expertise on controlling environmental impacts of industrial energy use. The division is committed to a revitalized competitiveness in the national economy. (Website: <http://www.anl.gov>).
- **Oak Ridge National Laboratory:** The Oak Ridge National Laboratory performs research on a broad range of energy-related problems and provides technical information and assistance on energy research for State and local governments and the private sector. Areas of research include waste management, fossil, fuel power generation technology, nuclear power generation technologies, fusion technology, conservation, and environment. (Website: <http://www.ornl.gov>).
- **Federal Energy Technology Center:** The Federal Energy Technology Center (FETC), one of the government's principal fossil fuel energy research centers, is responsible for research and development programs in the technical and administration management of fossil energy. The FETC is part of the Bruceton Research Center, which is the Nation's largest governmental lab devoted to coal research and development. The center's program responsibilities include clean coal technology, coal preparation, combustion technology, alternative fuels utilization, flue gas cleanup, coal liquefaction, advanced research and technology development in direct utilization and liquefaction, and solids transport. (Website: <http://www.fetc.doe.gov>).

VIII.B EPA Voluntary Programs

Environmental Leadership Program

The Environmental Leadership Program (ELP) is a national initiative developed by EPA that focuses on improving environmental performance, encouraging voluntary compliance, and building working relationships with stakeholders. EPA initiated a one year pilot program in 1995 by selecting 12 projects at industrial facilities and federal installations that demonstrate the principles of the ELP program. These principles include: environmental

management systems, multimedia compliance assurance, third-party verification of compliance, public measures of accountability, pollution prevention, community involvement, and mentor programs. In return for participating, pilot participants received public recognition and were given a period of time to correct any violations discovered during these experimental projects. Four fossil fuel electric power generation facilities proposals were accepted and are listed in Table 43. Progress reports and fact sheets from these pilot programs are now available from EPA or off the web.

Table 43: List of Power Plants That Participated in the Environmental Leadership Program For 1995 and 1996

1. Arizona Public Service, Deer Valley Facility (Phoenix, AZ)
2. Duke Power Riverbend Steam Station (Mt. Holly, NC)
3. Ocean State Power (Burrillville, RI)
4. Salt River Project (Phoenix, AZ)

EPA is making plans to launch its full-scale Environmental Leadership Program in 1997. The full-scale program will be facility-based with a 6-year participation cycle. Facilities that meet certain requirements will be eligible to participate, such as having a community outreach/employee involvement programs and an environmental management system (EMS) in place for 2 years. (Contact: Debby Thomas, ELP Deputy Director, (202)564-5041. Website: <http://es.inel.gov/elp>).

Project XL

Project XL was initiated in March 1995 as a part of President Clinton's *Reinventing Environmental Regulation* initiative. The projects seek to achieve cost effective environmental benefits by providing participants regulatory flexibility on the condition that they produce greater environmental benefits. EPA and program participants will negotiate and sign a Final Project Agreement, detailing specific environmental objectives that the regulated entity shall satisfy. EPA will provide regulatory flexibility as an incentive for the participants' superior environmental performance. Participants are encouraged to seek stakeholder support from local governments, businesses, and environmental groups. EPA hopes to implement fifty pilot projects in four categories, including industrial facilities, communities, and government facilities regulated by EPA. Applications will be accepted on a rolling basis. For additional information regarding XL projects, including application procedures and criteria, see the

May 23, 1995 Federal Register Notice. (Contact: Fax-on-Demand Hotline 202-260-8590, or Christopher Knopes at EPA's Office of Policy, Planning and Evaluation (202)260-9298. Website: Web: <http://www.epa.gov/ProjectXL>)

Climate Wise Recognition Program

The Climate Change Action Plan was initiated in response to the U.S. commitment to reduce greenhouse gas emissions in accordance with the Climate Change Convention of the 1990 Earth Summit. As part of the Climate Change Action Plan, the Climate Wise Recognition Program is a partnership initiative run jointly by EPA and DOE. The program is designed to reduce greenhouse gas emissions by encouraging reductions across all sectors of the economy, encouraging participation in the full range of Climate Change Action Plan initiatives, and fostering innovation. Program participants are required to identify and commit to actions that reduce greenhouse gas emissions. The program, in turn, gives organizations early recognition for their reduction commitments; provides technical assistance through consulting services, workshops, and guides; and provides access to the program's centralized information system. At EPA, the program is operated by the Air and Energy Policy Division within the Office of Policy Planning and Evaluation. (Contact: Pamela Herman, (202)260-4407. Website: <http://www.oit.doe.gov/Access/climate>).

Green Lights Program

EPA's Green Lights program was initiated in 1991 and has the goal of preventing pollution by encouraging U.S. institutions to use energy-efficient lighting technologies. The program saves money for businesses and organizations and creates a cleaner environment by reducing pollutants released into the atmosphere. The program has over 2,345 participants which include major corporations, small and medium sized businesses, federal, state and local governments, non-profit groups, schools, universities, and health care facilities. Each participant is required to survey their facilities and upgrade lighting wherever it is profitable. As of March 1997, participants had lowered their electric bills by \$289 million annually. EPA provides technical assistance to the participants through a decision support software package, workshops and manuals, and an information hotline. EPA's Office of Air and Radiation is responsible for operating the Green Lights Program. (Contact: Green Light/Energy Star Hotline at 1-888-STARYES or Maria Tikoff Vargar, EPA Program Director, at (202)233-9178. Website: <http://www.epa.gov/greenlights.html>).

WasteWi\$e Program

The WasteWi\$e Program was started in 1994 by EPA's Office of Solid Waste and Emergency Response. The program is aimed at reducing municipal solid wastes by promoting waste prevention, recycling collection and the manufacturing and purchase of recycled products. As of 1997, the program had about 500 companies as members, one third of whom are Fortune 1000 corporations. Members agree to identify and implement actions to reduce their solid wastes setting waste reduction goals and providing EPA with yearly progress reports. To member companies, EPA, in turn, provides technical assistance, publications, networking opportunities, and national and regional recognition. (Contact: WasteWi\$e Hotline at 1-800-372-9473 or Joanne Oxley, EPA Program Manager, (703)308-0199. Website: <http://www.epa.gov/epaoswer/non-hw/reduce/wstewise/index.html>)

*NICE*³

The U.S. Department of Energy is administering a grant program called The National Industrial Competitiveness through Energy, Environment, and Economics (NICE³). By providing grants of up to 45 percent of the total project cost, the program encourages industry to reduce industrial waste at its source and become more energy-efficient and cost-competitive through waste minimization efforts. Grants are used by industry to design, test, and demonstrate new processes and/or equipment with the potential to reduce pollution and increase energy efficiency. The program is open to all industries; however, priority is given to proposals from participants in the forest products, chemicals, petroleum refining, steel, aluminum, metal casting and glass manufacturing sectors. (Contact: Chris Sifri, DOE, (303)275-4723 or Eric Hass, DOE, (303)275-4728. Website: <http://www.oit.doe.gov/access/nice3>).

VIII.C Trade Association/Industry Sponsored Activity

Trade associations, in conjunction with their industry members, sponsor activities that serve to further regulatory compliance initiatives. This section describes a major environmental compliance assistance program being sponsored by the utilities in the fossil fuel electric power generation industry, as well as some of the major trade associations serving the fossil fuel electric power generation industry.

VIII.C.1 Environmental Programs

Climate Challenge Program

The Climate Challenge Program is a joint initiative of DOE and the electric utility industry to reduce greenhouse gas emissions. Electric utilities voluntarily commit to undertake actions to reduce, avoid, or sequester more than 47 million metric tons of carbon equivalent by the year 2000. These commitments are formalized in individual utility participation accords for large utilities, and letters of participation for utilities with less than 50,000 customers. Utilities report greenhouse gas emissions data and submit annual reports, which describe their achievements, to DOE. The Climate Challenge Options Workbook describe more than 50 options for utilities to implement to meet their participation commitments. The workbook was jointly developed by the electric power industry and DOE. (Contact: Larry Mansueti, Program Director, Office of Utility Technologies, EE-10, U.S. DOE, 1000 Independence Avenue SW, Washington, DC 20585. Website: <http://bejing.dis.anl.gov/ee-cgi-bin/ccap.pl>)

The utility industry has also developed a set of initiatives to help utilities meet their commitments. These include:

- **EnviroTech Investment Fund**, which fund invests in companies focusing on regenerating energy technologies that are more energy efficient than those currently in use.
- **International Utility Efficiency Projects** that support energy development in a way that is environmentally beneficial.
- **Utility Forest Carbon Management Program**, which comprises domestic and international forestry projects to manage CO₂ emissions.

VIII.C.2 Summary of Trade Associations

Trade associations and professional organizations that serve the fossil fuel electric power generation industry are numerous and varied in their focus. They range from serving a relatively small portion of the industry (e.g., independent power producers) to serving the industry as a whole. This section briefly describes some major trade and professional organizations for this industry.

American Coal Ash Association (ACAA) 2760 Eisenhower Avenue, Suite 304 Alexandria, VA 22314 Phone: (703) 317-2400 Fax: (703) 317-2409 Website: http://www.aaa-usa.org	Members: 110 Staff: 5 Contact: Samuel S. Tyson
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Founded in 1968, ACAA's mission is to advance the management and use of Coal Combustion Products (CCPs) in ways that are technically sound, commercially competitive, and environmentally safe.

American Public Power Association (APPA) 2301 M Street, NW Washington, DC 20037 Phone: (202) 467-2900 Fax: (202) 467-2910 Website: http://www.appa.org/	Members: 2,000 Staff: 60 Contact: Alan H. Richards
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Founded in 1940, APPA's members include public utility systems, State- and county-owned electric systems, and rural cooperatives. The APPA maintains a library on the electric power industry and publishes a bimonthly magazine. The APPA also conducts research programs, compiles statistics, and offers utility education courses in electric power. The association holds an annual conference and workshops.

Association of Energy Engineers (AEE) 4025 Pleasantville Road., Suite 420 Atlanta, GA 30340 Phone: (770) 447-5083 Fax: (770) 446-3969 Website: http://www.aeecenter.org/	Members: 8,500 Staff: 9 Contact: Ruth M. Bennett
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Founded in 1977, the members of the AEE are engineers, architects, and other professionals interested in energy management and cogeneration. The AEE promotes advancement of the profession and contributes to the professional development of its membership. The AEE provides scholarships for students in energy engineering, supports the National Energy Policy Council, and sponsors the Cogeneration and Competitive Power Institute, a research organization. The AEE publishes journals and newsletters and sponsors several technical and managerial congresses each year.

Edison Electric Institute (EEI) 701 Pennsylvania Avenue, NW Washington, DC 20004-2696 Phone: (202) 508-5000 Fax: (202) 508-5360 Website: http://www.eei.org/	Members: 202 Staff: 262 Contact: Thomas Kuhn, President
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Founded in 1933, EEI members are investor-owned electric utility companies operating in the United States. Some affiliated members are from Canada, Mexico, and Central and South America. The EEI acts as a representative for the shareholder-owned electric power industry on subjects of public interest and provides a medium for the exchange of ideas and information within the electric power industry. The institute maintains a library and database and compiles statistics. The EEI provides educational programs and publishes surveys, which provide statistical and factual information about operation, rates, regulation, and environmental practices.

Electric Power Research Institute (EPRI) 3412 Hillview Road Palo Alto, CA 94303 Phone: (415) 855-2000 Fax: (415) 855-2041 Website: http://www.epri.com/	Members: 700 Staff: 500 Contact: Kurt Yeager, Exec. Officer
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The EPRI was founded in 1972 and serves all sectors of the electric utility industry. The EPRI mission is to conduct a broad economically and environmentally acceptable program of research and development in technologies for electric power production, distribution, transmission, and utilization. The EPRI primary research areas are advanced power systems, coal combustion systems, electrical systems, energy analysis, and environment and energy management and utilization. The institute maintains a library and a database of current and completed research in the electric power industry. The institute also publishes a guide and a journal.

Electric Power Supply Association (EPSA) 1401 H Street NW, Suite 760 Washington, DC 20005 Phone: (202) 789-7200 Fax: (202) 789-7201	Members: 90 Staff: 12
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The EPSA was formed by a merger of two former trade associations: the Electric Generating Association and the National Independent Energy Producers (NIEP). (The Electric Generation Association was formed by the merger of the Independent Power Producers Working Group and the

Cogeneration and Independent Power Coalition of America.) The EPSA mission is to advance the interests of its members: competitive generators, power marketers, and other suppliers. The EPSA advocates domestic and international policies that will result in a fully competitive electric power supply marketplace. The EPSA supports the development of a market in which existing commitments, such as independent power contracts, are honored and in which all customers have a choice of electric suppliers by a certain date.

National Rural Electric Cooperative Association (NRECA) 4301 Wilson Boulevard Arlington, VA 22203 Phone: (703) 907-5500 Fax: (703) 907-5521 Website: http://www.nreca.org/	Members: 1000 Staff: 600 Contact: Glenn English
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The NRECA, founded in 1942, represents rural electric cooperatives, public power districts, and public utility districts in 46 States. The NRECA is an advocate for energy and operational issues, as well as rural electric development. The association maintains a library of 20,000 volumes, holds professional conferences, and publishes a magazine and newsletter. Other activities include legislative representation; energy, regulatory, and legal expertise; industry public relations; management institutes; training and energy research and development consulting services; insurance and safety programs; wage and salary surveys; and an international program.

North American Electric Reliability Council (NERC) Princeton Forrestal Village 116-390 Village Boulevard Princeton, NJ 08540-5731 Phone: (609) 452-9550 Fax:(609) 452-7669 Website: http://www.nerc.com/	Members: 9 Regional Councils Contact: Michehl R. Gent
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The NERC is a nonprofit company owned by nine regional councils. The members of the regional councils and one affiliate are individual utilities representing all ownership categories of the electric utility industry, including investor-owned, municipal, rural electric cooperatives, Federal, independent power producers, power marketers, and power brokers. The principal purpose of NERC is to coordinate, promote, and communicate the reliability of North American electric utilities. The organization annually reviews the reliability and adequacy of the bulk electricity systems in North America and maintains several databases. In addition, the organization facilitates

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development of reliability-related planning and operating criteria and standards, and publishes reports and reference documents.

Utility Air Regulatory Group (UARG) c/o Hunton & Williams 1900 K Street NW Washington, DC 20460 Phone: (202) 955-1500 Fax: (202) 778-2201	Members: 74
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The UARG is a voluntary, nonprofit, unincorporated, ad hoc group of 74 electric utilities, the EEI, the NRECA, and the APPA. The UARG's purpose is to participate on behalf of its members collectively in Federal air pollution control regulatory activities and in related litigation.

Utility Solid Waste Activities Group (USWAG) c/o EEI 701 Pennsylvania Ave. NW Washington, DC 20004 Phone: (202) 508-5645 Fax: (202) 508-5150	Members: 83 Contact: Jim Roewer
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The USWAG is an informal consortium of the EEI, the APPA, the NRECA and approximately 80 electric utility companies. Together, USWAG members represent more than 85 percent of the total electric generating capacity of the United States and service more than 95 percent of the Nation's consumers of electricity. The mission of USWAG is to help member companies manage all utility wastes and byproducts in a manner that is protective of human health and the environment and is of reasonable cost.

Utility Water Act Group (UWAG) c/o Hunton & Williams 1900 K Street NW Washington, DC 20460 Phone: (202) 955-1500 Fax: (202) 778-2201	Members: 78 Contact: John (Jack) F. Mackenzie, Chair Pacific Gas and Electric Co. Phone: (415) 973-6901 Fax: (415) 973-9201
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The UWAG is an association of 75 individual utilities and three national trade associations of electric utilities--the EEI, the NRECA, and the APPA. The UWAG purpose is to participate on behalf of its members in EPA's rulemakings under the CWA and in litigation arising from those rulemakings.

IX. CONTACTS/ACKNOWLEDGMENTS/RESOURCE MATERIALS

For further information on selected topics within the fossil fuel electric power generation industry a list of contacts and publications are provided below.

Contacts

Name	Organization	Telephone	Subject
Rafael Sanchez	EPA/OECA/METD	(202) 564-7028	Compliance assistance
Chris Oh	EPA/OECA/METD	(202) 564-7004	Compliance assistance
Joe Daly	EPA/OST/EAD	(202) 260-7186	Steam Electric Effluent Guidelines

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- Bill Wemhoff - American Public Power Association (APPA)
- Kara M. Downey - Arizona Electric Power Cooperative, Inc.(AEPC)
- Ruth M. Bennett - Association of Energy Engineers (AEE)
- Alice Meyer - Edison Electric Institute (EEI)
- Richard W. Sternberg - National Rural Electric Cooperative Association (NRECA)
- Anthony Riai - EPA/Office of Enforcement and Compliance Assurance (EPA/OECA)

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